DOCKET NO: 282730US8X PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
WILLIAM E. FORD, ET AL.	: EXAMINER: JOHNSON, E. M.
SERIAL NO: 10/538,300	:
FILED: JUNE 10, 2005	: GROUP ART UNIT: 1793
FOR: SOLUBLE CARBON NANOTUBES	:

LETTER REQUESTING REMOVAL OF INCORRECT LISTED

PRELIMINARY AMENDMENT FROM PAIR'S IMAGE FILE WRAPPER

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicants hereby request that the non-final amendment filed on August 23, 2007, for Application Serial No. 10/680,006 , but incorrectly listed in PAIR as a Preliminary Amendment for the Application Serial No. 10/538,300 be removed from the Image File Wrapper.

On August 23, 2007, we filed an Amendment Cover Letter, a three-month Request for Extension of Time, and non-final Amendment in response to the Official Action dated February 23, 2007 for Application Serial No. 10/680,006. On October 19, 2007 we received a Notice of Abandonment from the U.S. Patent and Trademark Office (USPTO) indicating that a response was not filed in Application Serial No. 10/680,006.

After reviewing the Notice of Abandonment, we checked our docketing system and determined that a response was filed with the USPTO on August 23, 2007 for the above-identified application. However, after checking the actual papers filed on August 23, 2007

we discovered that the attorney docket number for a different application (Serial No. 10/538, 300) was inadvertently typed onto the Amendment. As a result, the identifying information for Application Serial No. 10/538, 300 auto-populated on the top portion of page 1 of the Amendment. We did a check of PAIR's Image File Wrapper for Application Serial No. 10/680,006 and discovered that there was no evidence indicating that an Amendment was filed.

We then viewed PAIR's Image File Wrapper for Application Serial No. 10/538, 300 and realized that the Amendment filed on August 23, 2007 was entered into the USPTO's system as a Preliminary Amendment for Application Serial No. 10/538, 300. The response filed on August 23, 2007 was not meant to be filed as a Preliminary Amendment for Application Serial No. 10/538, 300, but as non-final Amendment for Application Serial No. 10/680,006. Also, a non-final Amendment would not have been intentionally filed in Application Serial No. 10/538, 300, considering the fact that an Official action has not been issued by the USPTO.

To further prove that the Preliminary Amendment is listed incorrectly in the Image File Wrapper of Application Serial No. 10/538,300, please note that the non-final Amendment was filed using Claims 1-16 (as shown on pages 2-8 of the attached date-stamped Amendment) from Application Serial No. 10/680,006. Also, the Remarks/Arguments section (pages 9-12 of the attached date-stamped Amendment) refer to detailed information which can clearly be found in the attached Official Action of February 23, 2007 for Application Serial No. 10/680,006. Also, the Image File Wrapper for Application Serial No. 10/680,006 include the Amendment Cover Letter and three-month Request for Extension of Time that was filed with the Amendment on August 23, 2007. The Amendment Cover Letter states that an Amendment is attached.

We have enclosed copies of PAIR's Image File Wrappers for Application Serial Nos. 10/538,300 and 10/680,006, date-stamped copies of the Filing Receipt, non-final Amendment, Amendment Cover Letter and Three-month Request for Extension of Time filed on August 23, 2007, and a copy of the Official Action issued in Application Serial No. 10/680,006 on February 23, 2007.

In light of the foregoing, the undersigned petitioner declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Customer Number
22850

Tel: (703) 413-3000
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(OSMMN 08/07)

EXHIBIT A

Copies of the Date-Stamped Papers Filed on August 23, 2007:

•Copy of the Date-Stamped Filing Receipt

•Copy of the Amendment Cover Letter- from PAIR's Image File Wrapper for 10/680,006

•Copy of the Request for Extension of Time under 37 C.F.R. § 1.136 for Three-Months- from PAIR's Image File Wrapper for 10/680,006

•Copy of the Amendment under 37 C.F.R. § 1.111- from PAIR's Image File Wrapper for 10/538,300; incorrectly listed as a Preliminary Amendment in PAIR's Image File Wrapper

COPY

Dept.: E/M

SMM&N File No. 282736US8X By: BDL/maj/____

erial No. 10/680,006

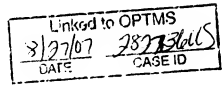
n the matter of the Application of: Frederic KAPLAN

or: ADAPTIVE ARTIFICIAL VISION METHOD AND SYSTEM

Due Date: August 23, 2007

he following has been received in the U.S. Patent Office on the date stamped herec

- Credit Card Form for $1,020.00
- Dep. Acct. Order Form
- Amendment Cover Letter
- Amendment
- Request for Extension of Time (3 Months)



COPY

Docket No. 282736US8X
IN RE APPLICATION OF: Frederic KAPLAN
SERIAL NO: 10/680,006
FILED: October 7, 2003
FOR: ADAPTIVE ARTIFICIAL VISION METHOD AND SYSTEM

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:
Transmitted herewith is an amendment in the above-identified application.

☐ No additional fee is required
☐ Small entity status of this application under 37 C.F.R. §1.9 and §1.27 is claimed.
■ Additional documents filed herewith: Request for Extension of Time (3 Months)

The Fee has been calculated as shown below:

CLAIMS	CLAIMS REMAINING		HIGHEST NUMBER PREVIOUSLY PAID	NO. EXTRA CLAIMS	RATE	CALCULATIONS
TOTAL	16	MINUS	20	0	x $50 =	$0.00
INDEPENDENT	3	MINUS	3	0	x $200 =	$0.00
APPLICATION SIZE		MINUS	100	0 (each addtl. 50 sheets)	x $250 =	$0.00
		☐ MULTIPLE DEPENDENT CLAIMS			+ $360 =	$0.00
		TOTAL OF ABOVE CALCULATIONS				$0.00
		☐ Reduction by 50% for filing by Small Entity				$0.00
					TOTAL	$0.00

☐ A check in the amount of **$0.00** is attached.

■ Credit card payment form is attached to cover the fees in the amount of **$1,020.00**

■ Please charge any additional Fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

■ If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time may be charged to Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Bradley D. Lytle
Registration No. 40,073

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(OSMMN 05/03)

Docket No. 282736US8X

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Frederic KAPLAN

SERIAL NO: 10/680,006 GAU: 2624

FILED: October 7, 2003 EXAMINER: LIEW, A. K. S.

FOR: ADAPTIVE ARTIFICIAL VISION METHOD AND SYSTEM

REQUEST FOR EXTENSION OF TIME UNDER 37 C.F.R. 1.136

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

It is hereby requested that a **three** month extension of time be granted to August 23, 2007 for

- ■ filing a response to the Official Action dated: February 23, 2007.
- ☐ responding to the requirements in the Notice of Allowability dated:
- ☐ filing the Formal Drawings. The Issue Fee due has been timely filed.
- ☐ responding to the Notice to File Missing Parts of Application dated:
- ☐ filing a Notice of Appeal. A timely response to the final rejection, due has been filed.
- ☐ filing an Appeal Brief. A Notice of Appeal was filed on:
- ☐ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee amount shown below is reduced by one-half.

The required fee of $1,020.00 is enclosed herewith by credit card payment and any further charges may be made against the Attorney of Record's Deposit Account No. 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Bradley D. Lytle
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08/24/2007 MAHMED1 00000091 10680006
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DOCKET NO: 282730US8X PCT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF	:
WILLIAM E. FORD, ET AL.	: EXAMINER: LIEW, A. K. S.
SERIAL NO: 10/538,300	:
FILED: JUNE 10, 2005	: GROUP ART UNIT: 2818
FOR: SOLUBLE CARBON NANOTUBES	:

AMENDMENT

COMMISSIONER FOR PATENTS
ALEXANDRIA, VIRGINIA 22313

SIR:

Responsive to the Office Action of February 23, 2007, please amend the above-identified application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 9 of this paper.

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Original): An adaptive artificial vision method comprising the following steps:

(a) defining successive couples of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...) such that the time difference τ between two synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...) of a couple of synchronized timesteps is equal to a predetermined time delay τ_0,

(b) comparing two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) at each couple of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...) spaced by said predetermined time delay τ_0 for obtaining a delta image Δ_t which is the result of the computation of the distance between each pixel of said two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) in view of characterizing movements of objects between said two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...),

(c) extracting features from said delta image Δ_t for obtaining a potential dynamic patch P_t which is compared with dynamic patches previously recorded in a first repertory R_d which is progressively constructed in real time from an initial void repertory,

(d) selecting the closest dynamic patch D_i in this first repertory R_d or if not sufficiently close dynamic patch still exists, adding the potential dynamic patch P_t to the first repertory R_d and therefore obtaining and storing a dynamic patch D_i from the comparison of two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) at each couple of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...), and

(e) temporally integrating stored dynamic patches Di of the first repertory R_d in order to detect and store stable sets of active dynamic patches representing a characterization of a reoccurring movement or event which is observed.

Claim 2 (Original): A method according to claim 1, wherein when stable sets of active dynamic patches representing a characterization of a reoccurring movement have been detected, the center of the movement is identified and static patches which are at a predetermined distance d from the movement center and are obtained by a process of static pattern recognition are analyzed to constitute at a given timestep a set of active static patches S_i which are stored in a second repertory R_s.

Claim 3 (Original): A method according to claim 2, wherein stored patches S_i of the second repertory R_s are spatially integrated in order to detect and store stable sets of active static patches representing a characterization of an object which is recurrently involved in observed known reoccurring movements.

Claim 4 (Currently Amended): A method according to claim 2 ~~or claim 3~~, wherein the process of static pattern recognition and production of static patches is initiated after stable sets of active dynamic patches representing a characterization of a reoccurring movement have been detected.

Claim 5 (Currently Amended): ~~A method according to claim 2,~~ An adaptive artificial vision method comprising the following steps:

(a) defining successive couples of synchronized timesteps $(t_{-1}, t\,;\, t, t_{+1}\,;\ldots)$ such that the time difference τ between two synchronized timesteps $(t_{-1}, t\,;\, t, t_{+1}\,;\ldots)$ of a couple of synchronized timesteps is equal to a predetermined time delay τ_0,

(b) comparing two successive images $(I_{t-1}, I_t\,;\, I_t, I_{t+1}\,;\ldots)$ at each couple of synchronized timesteps $(t_{-1}, t\,;\, t, t_{+1}\,;\ldots)$ spaced by said predetermined time delay τ_0 for obtaining a delta image Δ_t which is the result of the computation of the distance between each

pixel of said two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) in view of characterizing movements of objects between said two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...),

(c) extracting features from said delta image Δ_t for obtaining a potential dynamic patch P_t which is compared with dynamic patches previously recorded in a first repertory R_d which is progressively constructed in real time from an initial void repertory,

(d) selecting the closest dynamic patch D_i in this first repertory R_d or if not sufficiently close dynamic patch still exists, adding the potential dynamic patch P_t to the first repertory R_d and therefore obtaining and storing a dynamic patch D_i from the comparison of two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) at each couple of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...), and

(e) temporally integrating stored dynamic patches Di of the first repertory R_d in order to detect and store stable sets of active dynamic patches representing a characterization of a reoccurring movement or event which is observed,

wherein when stable sets of active dynamic patches representing a characterization of a reoccurring movement have been detected, the center of the movement is identified and static patches which are at a predetermined distance d from the movement center and are obtained by a process of static pattern recognition are analyzed to constitute at a given timestep a set of active static patches S_i which are stored in a second repertory R_s, and wherein the process of static pattern recognition and production of static patches is initiated at the same time as the process of dynamic movement recognition and production of dynamic patches and when stable sets of active dynamic patches representing a characterization of a reoccuring movement have been detected, the process of static pattern recognition is continued exclusively with static patches which are located in a restricted area of the image which is centered on said identified movement center.

Claim 6 (Currently Amended): A method according to claim 1, wherein during the computation of the distance between each pixel of two successive images (I_{t-1}, I_t), a filter function f_{th} is used to keep only the most significant differences and therefore obtain a delta image Δ_t such that

~~$\Delta t = f_{th}(||I_{t-1} - I_t||)$~~ $\Delta_t = f_{th}(||I_t - I_{t-1}||)$

Claim 7 (Original): A method according to claim 6, wherein the filter function f_{th} is a threshold function.

Claim 8 (Currently Amended): A method according to ~~any one of claims 1 to 7~~ claim 1, wherein the step of extracting features from the delta image Δ_t comprises computing a gaussian color model of the distribution for each color component.

Claim 9 (Currently Amended): A method according to ~~any one of claims 1 to 7~~ claim 1, wherein the step of extracting features from the delta image Δ_t comprises using histograms to model the distribution for color components, shape or texture.

Claim 10 (Currently Amended): A method according to ~~any one of claims 2 to 5~~ claim 2, wherein static patches are obtained on the basis of salient points (x,y) in an image I_t provided at a synchronized timestep t when a salient point (x,y) is detected, a region $R_{x,y}$ corresponding to the surrounding pixels is defined and features are extracted from this region $R_{x,y}$ to define a potential static patch $S_{x,y}$.

Claim 11 (Original): A method according to claim 10, wherein the extraction of features from the region $R_{x,y}$ comprises measuring the color change of a pixel compared to its neighbors and computing a color model of the color distribution in the region $R_{x,y}$.

Claim 12 (Currently Amended): A method according to ~~any one of claims 1 to 11~~ claim 1, wherein successive steps of synchronized timesteps (t_{-1}, t ; T, T_{+1} ;...) are separated by a period of time T which is equal to n times the predetermined time delay τ_0, where n is an integer which is positive or equal to zero.

Claim 13 (Original): A method according to claim 12, wherein successive couples of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...) are contiguous without any time interruption between two successive couples of synchronized timesteps (t_{-1}, t ; t, t_{+1}).

Claim 14 (Currently Amended): A method according to ~~any one of claims 1 to 13~~ claim 1, wherein it further comprises the step of detecting transitions between stable sets of active dynamic patches representing a characterization of reoccurring movements and of constructing transition graphs for predicting complex events comprising a sequence of identified movements.

Claim 15 (Currently Amended): An adaptive artificial vision system comprising:

- a clock [[(101)]] for defining successive couples of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...) such that the time difference τ between two synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...) of a couple of synchronized timesteps is equal to a predetermined time delay τ_0,

- inputting means [[(102)]] for inputting images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) provided by a camera [[(103)]] at said synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...),

- first comparator means [[(104)]] for comparing two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) inputted at each couple of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...) spaced by said predetermined time delay τ_0 for obtaining a delta image Δ_t which is the result of the computation of the distance between each pixel of said two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...),

- first memory means (M_d) for storing dynamic patches Di representing elementary visual parts for describing characterized movements of objects,

- feature extraction means [[(105)]] for extracting features from said delta image Δ_t and producing a potential dynamic patch P_t,

- second comparator means [[(106)]] for comparing a potential dynamic patch P_t which is compared with dynamic patches previously recorded in said first memory means (M_d),

- selection means [[(107)]] for selecting the closest dynamic patches D_i in the first memory means (M_d) or if no sufficiently close dynamic patch still exists, for recording the potential dynamic patch P_t into the first memory means so that a dynamic patch D_i is stored in the first memory means for each comparison of two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) at each couple of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...),

- first temporal integrations means [[(108)]] comprising computing means [[(108A)]] for computing during a time T_{F1} corresponding to a predetermined number N1 of couples of synchronized timesteps the frequency of each dynamic patch D_i stored in the first memory means and threshold means [[(108B)]] for defining a set of active dynamic patches comprising dynamic patches D_i whose frequency is higher than a predetermined threshold, and,

- second temporal integration means [[(107)]] comprising computing means [[(109A)]] for computing during a time T_{F2} corresponding to a predetermined number N2 of

couples of synchronized timesteps the frequency of each set of defined active dynamic patches and threshold means [[(109B)]] for defining a stable set of dynamic patches corresponding to a reoccuring movement for each set of active dynamic patches whose frequency is higher than a predetermined threshold.

Claim 16 (Currently Amended): A system according to claim 15, wherein it further comprises means [[(110)]] for identifying the center of a reoccuring movement represented by a stable set of active dynamic patches and means [[(111)]] for triggering static pattern recognition [[(112)]] for analyzing static patches which are at a predetermined distance d from said center of a reoccuring movement.

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-16 are pending, Claims 4-6, 7-10, 12, 14, 15 and 16 having been amended by way of the present amendment.

In the outstanding Office Action Claims 6 and 7 were objected to as containing informalities; Claim 5 was objected to as being dependent upon a rejected base claim, but otherwise contains allowable subject matter; Claims 1 and 12-14 were rejected as being unpatentable over Cohen (U.S. Patent No. 6,681,031) in view of Dobashi (U.S. Patent Publication No. 2002/0126880); Claims 2-4, 10, 15 and 16 were rejected as being unpatentable over Cohen in view of Dobashi and in further view of Bongiovanni (U.S. Publication No. 2005/0041102); Claims 6 and 7 were rejected as being unpatentable over Cohen in view of Dobashi and in further view of Banh (U.S. Patent No. 5,150,426); Claims 8 and 9 were rejected as being unpatentable over Cohen in view of Dobashi and in further view of Kim (U.S. Patent No. 6,999,604); and Claim 11 was rejected as being unpatentable over Cohen in view of Dobashi, Bongiovanni and in further view of Kim.

In reply, Applicants first would to thank the Examiner for identifying allowable subject matter. Claim 5 has therefore been written in independent form and is believed to be in condition for formal allowance. The informality identified in Claim 6 has been corrected by way of the present amendment. Therefore it is believed that the objections to Claims 6 and 7 has been overcome.

Claim 1 is directed to an adaptive artificial vision method that, among other things, includes steps (c) extracting features from said delta image Δ_t for obtaining a potential dynamic patch P_t which is compared with dynamic patches previously recorded in a first repertory R_d which is progressively constructed in real time from an initial void repertory, and (d) selecting the closest dynamic patch D_i in this first repertory R_d or if not sufficiently

close dynamic patch still exists, adding the potential dynamic patch P_t to the first repertory R_d and therefore obtaining and storing a dynamic patch D_i from the comparison of two successive images (I_{t-1}, I_t ; I_t, I_{t+1} ;...) at each couple of synchronized timesteps (t_{-1}, t ; t, t_{+1} ;...).

Thus, a repertory is initially void and a first repertory R_d is progressively constructed in real time. In contrast, in Cohen a predetermined number of gestures are identified and the different types of gestures are divided in different lines. Cohen provides an initial repertory which is not void and is progressively constructed in real time.

According to Cohen, a reference database includes a limited number of patches corresponding to a limited number of stereotype gestures (see Abstract "Feature position measure is used in conjunction with a bank of predictor bins seeded with the gesture parameters, and the system determines which bin best fits the observed motion.").

As acknowledged in the outstanding Office Action, according to Cohen, in the identification process, a closest gesture in the reference bins will be selected and if there is none, then no gesture is identified (column 21, lines 54-64). Cohen thus discloses a non-flexible system which needs a preliminary identification of specific gestures and cannot be further expanded during a recognition process. This is a very substantial difference with respect to the subject matter defined by Claim 1.

Dobashi cannot reasonably be combined with Cohen because Dobashi relates to a face image recognition apparatus and a face image can hardly be defined as a recurring movement or element. Moreover, contrary to step c) in Claim 1, Dobashi requires a preset registration procedure (see page 6 [0090]) and cannot start with a void register. Furthermore, when a new reference feature amount is registered into the registration information holding section ([0086]), such new reference feature is considered as being a second class type of information ([0090]) "the old registration information is a feature amount registered by use of a preset

registration procedure and is highly worth holding and the new registration information is a feature amount extracted in the course of the recognition process and is less worth holding"). Accordingly, there is no incentive for a person of ordinary skill in the art to combine Dobashi and Cohen. Nevertheless, whether taken individually or in combination, neither Cohen nor Dobashi teach or suggest the claimed method since neither Dobashi or Cohen starts from a void register. Consequently it is respectfully submitted that Claim 1 patentably defines over Cohen in view of Dobashi.

Claims 2-4 and 6-14, as amended, all depend from Claim 1. Thus it is believed that these claims also patentably define over the asserted prior art.

Claim 15 relates to a corresponding system and therefore is of a different statutory class. But nevertheless, Claim 15 requires "selection means for selecting the closest dynamic patch D_i in the first memory means or if no sufficiently close dynamic patch still exists, for recording the potential dynamic patch P_i into the first memory means." As discussed above with regard to Claim 1, Cohen describes a non-flexible system which needs a preliminary identification of specific gestures and cannot be further expanded during a recognition process. Dobashi does not cure this deficiency because it does not disclose particular memory means specifically adapted for storing dynamic patches representing elementary visual parts for describing characterized movements of objects. Thus it is respectfully submitted that no combination of Cohen in view of Dobashi teaches or suggests all the elements of Claim 15. Because Claim 16 depends from Claim 15 it is respectfully submitted that Claim 16 also patentably defines over the asserted prior art.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-16, as amended, is patentably distinguishing over the prior art. The present application is therefore believed to

be in condition for formal allowance and an early and favorable reconsideration of this rejection is therefore requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Customer Number
22850

Tel: (703) 413-3000
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(OSMMN 08/07)

BDL\la

EXHIBIT B

•Copy of the Official Action issued in Application Serial No. 10/680,006

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,006	10/07/2003	Frederick Kaplan	282736US8X	4722

22850 7590 02/23/2007

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER	
LIEW, ALEX KOK SOON	
ART UNIT	**PAPER NUMBER**
2624	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/23/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/23/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No.	Applicant(s)	
	10/680,006	KAPLAN, FREDERICK	
	Examiner	Art Unit	
	Alex Liew	2624	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4 and 6-16* is/are rejected.

7)☒ Claim(s) *5-7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 6 and 7 are objected to because of the following informalities: The delta equation in claim 6 is written incorrectly. The examiner ask the applicant to correct the equation to be consistent to what is disclosed in the specification shown on page 8 line 4. Appropriate correction is required.

2. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regards to claim 5, the examiner cannot find applicable prior art and / or suggestions disclosing a process of static pattern recognition and production of static patches is initiated at the same time as the process of dynamic movement recognition and production of dynamic patches and when stable sets of active dynamic patches representing a characterization of a reoccurring movement have been detected, the process of static pattern recognition is continued *exclusively* with static patches which are located in a restricted area of the image which is centered on said identified movement center in combination with claims 1 and 2.

Relevant art

Kato (US pat no 4,633,506) discloses a changed original image is divided into a predetermined number of picture image units and the divisions of the changed original document are compared with the pictured image unit so that only the parts of the original document having changed contents are stored as new picture image units in the picture image storing section (see col. 3 lines 11 – 25).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1 and 12 – 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US pat no 6,681,031) in view of Dobashi (US pat no 2002/0126880).

With regards to claim 1, Cohen discloses an adaptive artificial vision comprising the following steps

defining successive couples of synchronized timesteps such that the time difference between two synchronized timesteps of a couple of synchronized timesteps is equal to a predetermined time delay (see fig 29 – image 1 and image 2 are two consecutive images taken using graphical user interface shown in fig 28 – the images taken are at a constant frames per second),

comparing two successive images at each couple of synchronized timesteps spaced by said predetermined time delay for obtaining a delta image which is the result of the computation of the distance between each pixel of said two successive images in view of characterizing movements of objects between said two successive images (see figure 29 – image 2 minus image 1),

extracting features from said delta image for obtaining a potential dynamic patch which is compared with dynamic patches previously recorded in a first repertory (see fig 3 – identification module identifies the type of gesture create, the type of gestures are divided in different bins shown in col. 21 lines 33 – 40),

selecting the closest dynamic patch in first repertory (in the identification process a closest gesture in the reference bins will be select if there is none then no gesture is identified, col. 21 lines 54 – 64) and

temporally detect and store stable sets of active dynamic patches representing a characterization of a reoccurring movement or event which is observed (images are taken at constant frames per second and being identified, the images must of stable for proper identification, examples of gestures being identifies are shown in figures 7 – 13). Cohen does not disclose if there is no sufficient dynamic patch, which matches the patches in the reference databases then add the unknown and new patch to the database. However, Dobashi takes the extra step of adding current data to the reference if the current data does not match the current templates in the reference database (see fig 8 – ST28 and ST29). Cohen takes consecutive images to identify the movement of the human body and Dobashi take images of a person to identify the

person, both having to perform pattern recognition using a reference database. One skill in the art would add new dynamic patches to the reference database because the new patches maybe are new patches which defines a set of new movements, which can be use future gesture identification, keeping the tracking system updated / current.

With regards to claim 12, Cohen discloses a method according to claim 1, wherein successive steps of synchronized timesteps are separated by a period of time, which is equal to n times the predetermined time delay, where n is an integer which is positive or equal to zero (when n is equal to zero, which is the preferred value of n in the claimed invention, page 7 lines 16 – 19, it would be the constant frames per second disclosed in claimed 1).

With regards to claim 13, Cohen discloses a method according to claim 1, wherein successive couples of synchronized timesteps are contiguous without any time interruption between two successive couples of synchronized timesteps (the system in Cohen images consecutive images without any interruption).

With regards to claim 14, Cohen discloses a method according to claim 1, wherein it further comprises the step of detecting transition between stables sets of active dynamic patches representing a characterization of reoccurring movements and of constructing transition graphs for predicting complex events comprising a sequence of identified

movements (see fig 4 and col. 6 lines 5 – 9 – the graphs shown in are transition of sequence of images which determines circular gesture movements).

3. Claims 2 – 4, 10, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US pat no 6,681,031) in view of Dobashi (US pat no 2002/0126880) as applied to claim 1 further in view of Bongiovanni (US pub no 2005/0041102).

With regards to claim 2, Cohen discloses a method of according to claim 1, wherein when stable sets of active dynamic patches representing a characterization of a reoccurring movement have been detected (see fig 8 – the user move in a circular pattern, more than one round, which becomes reoccurring – the movement model are shown in fig 5) and static patterns patches (fig 8 – the patch is the hand of the person performing the circular pattern in the image) which are at a predetermined distance, d, from the movement center (the distance, d, is the distance from the perimeter of the circular movement to the center of the circular movement), but does not disclose static pattern recognition at a given time step. However, Bongiovanni discloses static pattern recognition are analyzed at a given time step (see paragraph 33). It is a matter of choice whether one would chose to store result data and / or programs in a first, second, third, etc repertory, as long as it is stored in a form of computer storage medium the function disclosed in claim 2 can be perform. One skill in the art would static image pattern recognition to track an object is because to determine the boundary of the object to

measure its dimensions and obtain a better difference image, with less fuzzy boundary, improving tracking of the object.

With regards to claim 3, Cohen discloses a method according to claim 2, wherein stored static patches of the second repertory are spatially integrated in order to detect and store stable sets of active static patches representing a characterization of an object which is recurrently involved in observed known reoccurring movements (shown in fig 8 – as discussed in claim 7 the person's hand form patches as it moves in circular motion which forms reoccurring movements – the system must first identifies the location of the hand where in this case the hand is read as an area patch, inherently there are a shapes of the hand in a reference database which describes different gestures, those different hand shapes in the system are read as 'static patches representing a characterization of an object').

With regards to claim 4, Cohen combined with Dobashi and Bongiovanni disclose a method of claim 2, wherein the process of static pattern recognition and production of static patches is initiated after stable sets of active dynamic patches representing a characterization of a reoccurring movements (as discussed in claim 1, the system needs stable sets of dynamic patches in order to recognizes gestures, the 'production of static patches' starts right at the beginning when the system starts taking images / frames of the person performing gestures). Motivation provided in claims 1 and 2.

With regards to claim 10, see arguments, motivation and rejection of claim 2. The salient points are the locations of the hand in circular motion shown in fig 8 of Cohen; the hand section of the image is read as the 'region'. Bongiovanni teaches choosing / analyzing a still image from a series of consecutive frames (see paragraph 33).

With regards to claim 15, see the rationale and rejection for claims 1 and 2.

With regards to claim 16, see the rationale and rejection for claim 2.

4. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US pat no 6,681,031) in view of Dobashi (US pat no 2002/0126880) as applied to claim 1 further in view of Banh (US pat no 5,150,426).

With regards to claim 6, Cohen discloses all of the claim elements / features as discussed above in rejection for claim 1 and incorporated herein by reference, but fails to disclose using a threshold function on the difference image. Banh discloses a step of thresholding a difference image (see col. 1 lines 52 – 55) to detect a moving object. One skill in the art would threshold a difference image because to locate the object in the difference from the background image, improving object moving detection.

With regards to claim 7, see the rationale and rejection for claim 6.

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen (US pat no 6,681,031) in view of Dobashi (US pat no 2002/0126880) as applied to claim 1 further in view of Kim (US pat no 6,999,604).

With regards to claim 8, Cohen discloses all of the claim elements / features as discussed above in rejection for claim 1 and incorporated herein by reference, but fails to disclose computing Gaussian color model of the distribution for each color component. Kim discloses a step of extracting features from the delta image comprises computing a Gaussian color model of the distribution for each color component (see fig 1 – 100, shown more detail in fig 2, and 200 – GFCD color transform, col. 3 lines 31 – 48 – each of the color components in fig 2 are normalized then transformed in 200 of fig 1). One skill in the art would include transforming one color coordinate to another is because another color coordinate will have flexibility to adjust the brightness or darkness (for example from RGB to Hue-saturation-brightness – one can control the brightness of an image if color coordinate are in Hue-saturation-brightness color coordinate system), improving image quality while performing gesture recognition.

With regards to claim 9, see the rationale and rejection for claim 8.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen ('031) in view of Dobashi ('880) and Bongiovanni (US pub no 2005/0041102) as applied to claim 10 further in view of Kim ('604).

With regards to claim 11, see the rationale and rejection for claims 8 and 9. The change of color refers to detecting an edge of the object, which is included in Cohen during gesture detection process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Liew whose telephone number is (571)272-8623. The examiner can normally be reached on 9:30AM - 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alex Liew
AU2624
2/15/07

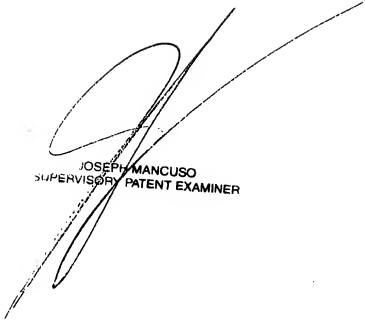

EXHIBIT C

Copies from PAIR's Image File Wrapper for:

- Application Serial No 10/680,006
- Application Serial No. 10/538,300

10/538,300 Soluble carbon nanotubes 12-11-2007::11:05:15

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10/680,006 Adaptive artificial vision method and system 12-11-2007::11:07:09

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